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SUCCESSFUL REMOVAL OF THE THYROID GLAND FOR BRONCHOCELE OR GOITRE—FULL RECOVERY OF THE PATIENT.

BY ORIN E. NEWTON, M. D.
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HISTORY.

Miss Ida B. Jarvis, residence Huntington, West Virginia, was presented to me Feb. 1, 1878, for an enlargement of the anterior portion of the throat, stating that a lump had first been noticed some seven years ago, since which time its growth had been continuous.

By pressure the tumor could be moved laterally without trouble. During the act of swallowing it would rise and fall in a line with the trachea.

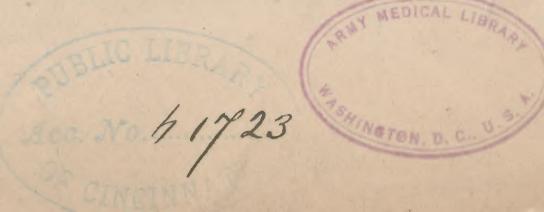
Believing it was not attached to the trachea, I gave it as my opinion that it could be removed by extirpation.

Having given the most rigid directions as to abstinence from food, I promised to make the effort for its removal.

The following day, assisted by Dr. C. M. Greve and G. H. Thuman, at 12 o'clock, I proceeded to place my patient under the influence of a mixture of two parts of ether and one of chloroform. When fully unconscious, I caused the patient's head to fall slightly backward, and made a vertical incision, in a line over the center of the tumor and trachea, over four inches in length. After dissecting the integuments well down on both sides, I found the tumor to be fully covered with muscular tissue, composed of the sternohyoid, sternothyroid, and omo-hyoid muscles. To expose the tumor from under this muscular tissue, I used the scissors. I then most carefully dissected down on both sides of the tumor, approaching the posterior base with great precaution. I now laid aside my knife and used my fingers as a gouge in separating the tumor from its posterior attachments. When removed, the cricoid cartilage and a part of the anterior portion of the trachea were exposed. There was excessive hemorrhage all the time accompanying the operation, especially so when the tumor was separated from its posterior base, giving me and my assistants much apprehension of danger from this cause. But, owing to the manner of the means of separation used—being more of the nature of scraping than cutting—and having used my fingers as a gouge in its final separation, I was able to manage the hemorrhage more easily than I had expected, especially that arising from the superior thyroid artery.

Having fully controlled the hemorrhage, I placed the proper amount of stitches to hold the edges of the wound together, over which I applied strips of adhesive plaster.

All this was done without the patient having the least knowledge of what had occurred.



Having ordered my patient one-eighth of a grain of morphine internally and a wet dressing, consisting of tr. aconite root, 3 i., tr. arnica 3 iv., aqua 3 iiiss., to the wound, I left her until 5 o'clock. I found that during my absence she had been very sick at the stomach, delirious part of the time, and at the time of my visit the pulse was at 120.

At 10 o'clock the same evening, with the means that were used, the stomach was more settled, and the arterial excitement somewhat lessened—the arterial sedative being two drops of tr. gelseminum and one of tr. veratrum every half hour. As an anti-nauseant: peppermint, spearmint, and camphor, waters $\ddot{a}\ddot{a}$ 3 i., paregoric 3 ij. Mix. One teaspoonful every ten minutes. The same treatment was continued throughout the night while the patient was awake.

Second day, 8 A. M.—Pulse 115, nausea less, with irregular periods of delirium through the night. Had slept about an hour; complains of intense thirst, which has existed since the previous evening. Same internal treatment continued, with the addition of gum aribic mucilage, slightly acidulated, for the thirst. Five o'clock, P. M.—Pulse 105; nausea arrested; the patient had slept nearly two hours during the day. Ordered broken doses of two teaspoonsful each, of castor oil, every three hours until the bowels were moved.

Third day, 8 A. M.—Pulse 100, a movement from the bowels after the third dose of the oil. Patient quite rational and comfortable; able, for the first time to take a little food, at which time discontinued the sedative; light diet, and the mucilaginous drinks continued.

Fourth day, 5 P. M.—The stitches were most carefully removed, when full and perfect adhesive inflammation was found to have taken place in the wound.

The subsequent dressing consisted of simply supporting the wound with adhesive plaster, changed once per day.

Eighth day.—The patient sitting up and the wound almost closed. The same treatment continued until the tenth day, when the wound was entirely healed and the patient discharged.

DESCRIPTION OF THE TUMOR.

Having uncovered the tumor during the operation, I punctured it, when blood flowed freely from it, but the tumor still preserved its previous density and oblong shape. Its color was a brownish red.

EXAMINATION AFTER REMOVAL

Shape oblong, with a smooth surface, covered by a thin fibrinous capsule, which could, however, be easily separated with the handle of a bistoury. The right upper part was composed of distinct cells, the size of a common grape pulp. There was a distinct circular band of concavity surrounding the tumor, showing the division of its lobes. After discharging the blood by puncturing, it still retained its firm, compact nature, though much lessened in size by this waste of blood.

BRONCHOCELE.

In "Liston's Elements of Surgery." By Gross. Pp. 333, 384.

"Extirpation of such growths has been repeatedly attempted, but the patients, almost without exception, have perished from hemorrhage, under the hands of the knivesmen. The immense supply of blood to the gland in the healthy state must be kept in mind, as also the enlargement of the vessels proportional to the increase of the part. Not arteries alone, but enormous veins are to be encountered. The tumor is in the vicinity of important organs, and of the trunks of large vessels and nerves, and probably has become attached to them. In short, the operation is attended with such risks, with so absolute a certainty of almost fatal results, as not to be warranted under any circumstances, far less for removal of deformity alone. Enlargement of the isthmus alone gives rise to more severe symptoms apparently, and may warrant an attempt at removal; but this can scarcely be accomplished altogether by incision. Such is my impression, and under this impression, I proceeded very cautiously in a case of this nature with which I had to deal.

J. R., a rat-catcher, aged 47, from the Highlands, was admitted into the Royal Infirmary. The isthmus of the thyroid gland was enlarged to the size of a goose's egg. The tumor was extremely hard and irregular on its surface, but not painful when touched. It appeared to be adherent to the trachea, and did not admit of much motion. The voice was considerably impaired, and breathing much impeded, inspiration being difficult and attended with a loud, wheezing noise. On making unusual exertion, even though inconsiderable, the dyspnoea was much increased; and on ascending a height, or even remaining for some time in a stooping posture, it amounted almost to suffocation. There was no pain or uneasiness in the larynx or trachea. The disease was of three years' duration. A seton had been introduced, but effected no diminution, and rendered the tumor more dense and less movable than formerly. I surrounded the lower part of the tumor by two semi-circular incisions, and dissected cautiously beneath its base, detached it from its more loose connections, not interfering with the central portion and its connection to the trachea. During the progress of the dissection, the blood flowed most profusely from both arteries and veins, but was restrained by securing the former with a ligature, and compressing the latter with sponge. An armed needle was then passed through the center of the tumor, as close to the trachea as possible, and its remaining attachment inclosed by the separate portions of the ligature firmly applied. Everything proceeded favorably. The tumor soon came away, the wound healed with a firm cicatrix, and in about a month, the patient went home well. I met him by chance in Aberdeen twelve months afterwards, free of complaint, and breathing easily under all circumstances, his neck presenting no vestige of the tumor."

BRONCHOCELE.

From Syme's "Principles and Practice of Surgery." By R. S. Newton. Pp. 486, 487.

"Of bronchocele, sometimes the whole gland is equally enlarged, but it generally exceeds on one side, and occasionally the swelling is limited to the right or left lobe entirely, particularly the latter. In this case the surgeon must be on his guard against supposing the disease is an aneurism of the carotid artery, or an independent tumor admitting of excision, which opinion he may be led to adopt by the seeming mobility of the growth, owing to the flexibility of its substance. The symptoms of bronchocele are swelling in the situation of the thyroid gland, which follows the motions of the larynx during deglutition, and cannot be moved without a corresponding displacement of it. There is seldom much obstruction, either in breathing or swallowing. The deep situation, muscular coverings, firm connections, and large blood-vessels of bronchocele, forbid excision, and the attempts which have been made with this view afford a sufficient warning against their repetition, by the fatal issue which has almost invariably immediately followed them. The operation has sometimes been found extremely difficult, owing to the displacement and overlapping of the vessels by the tumor."

BRONCHOCELE, OR GOITRE.

From Smith's "Operative Surgery." pp. 305-309.

"The thyroid gland is subject to two kinds of enlargement—one of a temporary nature known as goitre, the other a permanent scirrhus." True goitre exists at all periods of life, especially in the female sex, and consists in a chronic inflammation of the thyroid gland itself, which, beginning at some one point, is apt to extend until, as in a case related by Alibert, it reaches to the thighs of the patient. The changes in a goitre vary with its development, presenting sometimes a soft, gelatinous matter, or a more hardened structure, interspersed with cysts, containing a serous, glairy, or melicerous substance, and occasionally pus, fibrin, calcareous concretion, or pure blood. Vascular derangement being here very evident, the thyroid arteries are commonly found to be much enlarged. In some cases the swelling seems to consist of a congeries of varicose veins, and, under these circumstances, there may be considerable sanguineous effusions, the blood being poured into the enlarged vesicles or into the connecting cellular substance of the gland.

The scirrhus goitre presents a tumor covered by a firm, fibrous capsule, and consists of a spongy texture, in which appears a considerable number of cells, some of which are of a large size and contain a bloody fluid. Its consistence is often firm, but not scirrhus, except at the upper part, which sometimes has the texture, consistence, and white color of a true scirrhus.

Diagnosis.—The goitrous tumor has a smooth surface, a somewhat elastic feel follows all the motions of the larynx, especially in swallowing, and gives no sensation of crepitation, fluctuation, or pulsation. The propriety of operating on these tumors is a point on which most surgeons are very

decided, the opinion being almost universal that any attempt to extirpate them is most hazardous. Although the extirpation of a goitre cannot be regarded as a justifiable operation in most instances, the distress of breathing and swallowing which it sometimes causes may render it imperative on the surgeon to attempt some means of affording relief."

A CASE OF EXTIRPATION OF A SCIRRHOUS THYROID GLAND.

By J. C. Warren, of Boston.

" The patient being in the upright position, an incision nearly (4) four inches long was carried along the anterior edge of the sterno-mastoid muscle, so as to expose the platysma myodes, which was incised so as to present the edge of the sterno-mastoid. On turning this aside, the sterno-hyoid and thyroid muscles were perceived to cover the tumor in such a way that it was necessary to separate them and dissect between them. The surface of the tumor being then brought into view, was fully exposed by dissection, and separated from the sheath of the carotid artery by the handle of the knife. This apparently loosened its attachments, but a solid adhesion being formed to the trachea for one or two inches, and also to the oesophagus for a small extent, which required the use of the knife, the dissection was pursued upward and backward, in order to extract the superior corner of the gland.

The superior artery being divided in so deep a position as to prevent its ligation between the muscles, the common carotid was therefore tied. The inferior thyroid did not bleed, or was supposed not to exist, and the patient, after serious symptoms, recovered in about one month. Although I have placed among the preceding operations an account of the extirpation of the thyroid gland, as performed by Warren, it has been done rather to complete the record than from a wish to lead any one to its repetition, even when sanctioned by such excellent authority. Though occasionally performed, an attempt to extirpate a goitrous tumor is so liable to cause immediate death from hemorrhage, that few, as before stated, deem the operation justifiable, more than one patient having died on the table. The ligature, both by the subcutaneous method and also after the exposure of the tumor, has succeeded; yet the obstruction of the circulation through the part by this method has been followed by alarming symptoms of suffocation and congestion of the brain. Every surgeon should therefore avoid operating on any case of true goitre unless fully prepared to encounter great difficulties, or with a view of relieving certain suffocation. In the operative treatment of this tumor it may be well said that discretion is the better part of valor."

THYROID GLAND.

From Morton's "Human Anatomy," pp. 380, 381.

" This gland is situated on the upper part of the trachea, and is of a reddish brown color. It is embraced by a delicate, closely adherent proper membrane, which gives it a polished appearance. Examined internally, the gland is observed to be lobulated."

THE THYROID GLAND.

Quotations of Dunglison's Dictionary.

“Glandula Thyreoïdea” is an organ the uses of which are not known. It covers the anterior and inferior part of the larynx, as well as the first rings of the trachea, and seems to be composed of two lobes, flattened from before to behind, which are united by a transverse prolongation of the same nature as themselves, called the isthmus. (The tissue of the thyroid is soft, spongy, and of a brownish color, but its intimate structure is unknown. It is formed of several distinct lobules, collected in lobes of greater or less size.) The thyroid gland receives four large arteries called thyroideal, as well as corresponding veins. Its nerves proceed from the pneumogastric and from the cervical ganglia. No excretory duct has ever been found in it. Its uses are not known.

THYROID GLAND.

Gray's “Descriptive and Surgical Anatomy,” p. 787.

“The thyroid is situated at the upper part of the trachea, and consists of two lateral lobes, placed one on each side of that tube, and connected together by a narrow transverse portion—the isthmus, and is of a brownish red color. Its weight varies from one to two ounces. ‘Structure.’—The thyroid consists of numerous minute closed vesicles, composed of a homogeneous membrane, inclosed in a dense capillary plexus, and connected together into imperfect lobules by areolar tissue.”

THYROIDEAL ARTERIES.

Quotations from Dunglison's Dictionary

1st. “Thyroideal are two on each side. The superior thyroideal, superior laryngeal, superior guttural, arises from the anterior part of the external carotid, and proceeds to the upper part of the thyroid gland, after having given off a *laryngeal branch* and a *crico-thyroid*. 2d. The inferior thyroideal, inferior guttural, much larger than the last, arises from the upper part of the subclavian. It passes in a serpentine manner to the inferior part of the thyroid gland.”

THYROIDEAL VEINS.

From Dunglison's Medical Dictionary.

“Thyroideal veins are: 1st. A superior thyroideal, and several *middle thyroideal*, which open into the internal jugular vein. 2d. An *inferior thyroideal*, much larger than the preceding, whose branches form (by anastomosing with those of the opposite side in front of the trachea), a very remarkable venous plexus, which J. Cloquet calls the *infra-thyroideal plexus*. The inferior thyroideal veins open—the left into the corresponding subclavian, the right into the *vena cava superior*.”

PRACTICAL CONCLUSIONS.

After this operation and the minute examination of the tumor, I have come to the conclusion that all such cases should be treated at as early a period as possible, by charging the hypodermic syringe with iodine or Mon-sell's solution, and thrusting the tube into the centre of the tumor, or gland, and injecting it every fourth day, so long as the tumor shows contraction or decrease—fully believing that a majority of cases of primitive bronchocele would be arrested by this in their growth.

The therapeutic action would tend to close the arterial supply, and this done, the tumor would most certainly cease to grow, and its growth having been checked by destroying the vital action of the tumor, the absorbents would take up and carry off the dead tissue.

This stopping of the vital supply by the previous general treatment, which has, in my hands and others, cured such cases, (though very tedious), would be much more promptly accomplished in my opinion, by injecting these tumors.

The tediousness of the treatment with all previous means—the *alterative*, *strapping*, and the *local application of iodine, electricity*, or any other means which have been credited with occasionally curing these cases—have worn out the majority of cases before a cure was effected.

Early and prompt treatment is highly necessary in these cases.

DANGER OF DELAY

In the treatment and arrest of these cases is certainly very great, it being from very many causes.

The principal danger grows out of the probability that, by the increased growth, the *pressure* may become so great that by *absorption* the large blood vessels connected with and underneath the tumor are *eaten off*, and the patient may bleed to death.

I have had two patrons who neglected the treatment of their cases—though enjoying very good health at the time—die in a few moments from this sudden internal hemorrhage.

The result of the operation can be known by reading the following letter received from the brother of the patient :

HUNTINGTON, W. VA., April, 1878.

DR. O. E. NEWTON.—*Dear Sir:* I am most happy to state to you that the wound is now healed, after the surgical operation for the removal of a Bronchocele from my sister's neck, which you performed on the 2d of February, 1878. When I write you, that we are all under many, many obligations to you, for the wonderful cure you have performed, I am only stating the very least of our thoughts, for what we consider her life sayed.

And now once more thanking you, I will close

Yours Very Truly,

JOHN H. JARVIS.



